



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200

## Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Serial No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total
PO038421	MEC002-VU	2	1	Net 30	M17-4-H1150-R3.500	17-4 SS H1150 Round Bar 3.500" MATERIAL: 17-4 PH CONDITION H1150 receive ft				12	1/29/2018	12		S037874	Stock	2/1/2018	\$ 112.93 / ft	0		\$1,355
Total:										12		12								\$1,355.

Plex 2/1/2018 10:33 AM Dart.Dubois.Pascal



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Pack Slip No: 2817872

<b>Ship From:</b> A. M. Castle & Co. (Canada) Inc. Toronto 2150 Argenta Road MISSISSAUGA, ON L5N 2K7		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 23-JAN-2018	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid	<b>Carrier</b> LOCAL FLEET	<b>BOL No</b> 2830743	<b>Delivery No</b> 121556766		

Shipment Details

Final Destination Branch -

<b>Order No</b> 4995880	<b>Line No</b> 1	<b>Item No</b> 23972.BO	<b>Description</b> 3.5000.RD.17CR-4NI,STAINLESS,CF,H1150 132.0000-156.0000 SPECIFICATIONS: AMS 5643 ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com
<b>Purchase Order No</b> 38421	<b>Part Number</b>	<b>Ordered Qty</b> 392.52 LBS	<b>Invoice Qty</b> 12.2917 FT

Details

ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY  
ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S  
Email P/s and certs to: clavoie@dartaero.com  
END USER: DART AEROSPACE  
END USER: COMMERCIAL AIRCRAFT PARTS

<b>Mill/Source</b>	<b>Heat Number</b> 268831	<b>Mech ID</b>	<b>PCS</b> 1	<b>Width (IN)</b>	<b>Length (IN)</b> 147.5000	<b>Shipped Qty (LBS)</b> 408.0000
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We hereby certify the material covered by this certification conforms to the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description.  
Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 90 days of the shipment. Material cut to the correct spec. or material cut by the customer cannot be returned  
for credit.  
Reviewed by Authorized Castle Metals Representative:



Date  
01/31/18

Name  
[Signature]



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# **PURCHASE ORDER** **PO038421**

5037874

**Supplier:** MEC002-VU  
Metaux Castle  
P.O. Box 4090 Stn A  
Toronto  
ON  
M5W OE9 Canada

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**PO No:** PO038421  
**PO Date:** 11/20/17  
**Due Date:** 1/18/18  
**Purchase Order Revision:**  
**Revision Date:**  
**Ship-To Contact:** Lavoie, Chantal  
clavoie@dartaero.com  
**Via:** Ground  
**Pymt Terms:** Net 30  
**Freight Terms:**  
**Special Comments:**

## Items

Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
2	M17-4-H1150-R3.500		17-4 SS H1150 Round Bar 3.500" : MATERIAL: 17-4 PH CONDITION H1150 receive ft	Firmed	1/29/18	12 ft	0 ft	12 ft	\$112.93/ft	\$1,355.16
									<b>Grand Total:</b>	<b>\$1,355.16</b>

DAS  
11  
9-89

## Order Notes

Procurement Quality Clauses  
A005 right of entry  
A012 chemical and physical test report  
A016 personnel qualification  
A017 raw material identification (as applicable)  
A026 certification of material conformance  
A041 quality management system  
A042 dart notification by supplier  
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.

CL

Plex 1/29/18 3:15 PM dart.lavoie.chantal

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M17-4-H1150 R3500  
 DATE: JAN 31 2018

PO / BATCH NO.: 038421/5037874

MATERIAL CERT REQ'D: yes  
 QUANTITY RECEIVED: 12"  
 QUANTITY INSPECTED: 12"  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 3.500  
 THICKNESS RECEIVED: 3.500  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> Y N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y N	<u>AMS 3643</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y N	<u>Heat # 268831</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK.  
 RECORD RESULTS BELOW

	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

**QC 18 INSPECTION**

**ENGINEERING SIGNOFF (if required)**

INSPECTED BY: DAS  
11  
 DATE: 9-89  
JAN 31 2018

SIGNED OFF BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 17-4 PH / S17400 / TYPE 630 SS ROUND BAR  
GRAIN MUST BE ALONG LENGTH OF BAR  
MINIMUM YIELD STRENGTH PER TABLE  
MINIMUM ULTIMATE STRENGTH PER TABLE

SPECIFICATION: AMS 5643 OR ASTM A564

PART NUMBER: M17-4-111111-1 R X:XXX WHERE: HHHH SPECIFIES THE MATERIAL CONDITION (PER TABLE BELOW)  
COND O.D. X:XXX = DIAMETER (IN INCHES)

## MATERIAL CONDITION TABLE:

CODE	CONDITION	MIN YIELD TENSILE STRENGTH (KSI)	MIN ULTIMATE TENSILE STRENGTH (KSI)
(OMITTED)	NONE SPECIFIED (CONDITION A NOT ACCEPTABLE)	100	150
H900	H900	170	190
H925	H925	155	170
H1025	H1025	145	155
H1075	H1075	125	145
H1100	H1100	115	140
H1150	H1150	105	135
CONDA	CONDITION A (SOLUTION TREATED)		

NOTES: MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR TENSION OR SHEAR APPLICATIONS IN COLD WEATHER CONDITIONS  
MATERIAL IN H900 AND H925 CONDITION NOT RECOMMENDED FOR APPLICATIONS WHERE STRESS CORROSION CRACKING IS POSSIBLE  
CONDITION A NOT TO BE USED IN DESIGN FOR FINAL PRODUCT AND SHOULD ALWAYS BE HEAT TREATED

## EXAMPLES:

PART NUMBER  
4.000" DIAMETER BAR MIN UTS = 150 KSI, MIN YTS = 100 KSI  
2.500" DIAMETER BAR H900 CONDITION  
3.250" DIAMETER BAR H1025 CONDITION  
0.750" DIAMETER BAR A CONDITION

RELEASED  
2017-10-31  
E17-728

APPROVED

C	ADDED MATERIAL CONDITION (CIR17-107)	NO	17.09.14
B	REFORMAT DWG. S17400/TYPE 630 ADDED TO PURCHASE MATERIAL (ZN D8-1), ADD A564 SPEC (C8-1), REF PART 00420A	VS	10.05.20
A	NEW ISSUE	CP	05.03.16
REV.	DESCRIPTION	BY	DATE
DRAWN	NO	NO	DART AEROSPACE LTD
CHECKED	CP	NO	HAWKESBURY, ONTARIO, CANADA
MFG. APPR.	RA	CP	DRAWING NO. M17-4-R
APPROVED	WM	CP	TITLE 17-4 SS ROUND BAR
DE APPR.	CP	CP	SCALE NTS
DATE	17.09.14	CP	DATE 17.09.14

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**VALBRUNA**

SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST - PO BOX 630  
FORT WAYNE IN 46821 USA  
PHONE 260 434 2800 - FAX 260 434 2801

**Product Certification Report**

Report Number: **5272160**

Certified on Dec 15, 2016 Page 1 of 2

Order I.D.	Order Date	Commodity Code			
1602035 002	12/01/16	H6303.5RT			
Dim 1	Dim 2	Dim 3	Heat I.D.	Customer I.D.	Customer Purchase Order
3.5000	.0000	.0000	268831	002472	51869
Product Shape	Product Surface		Customer Grade		
Rounds	HR & Rough Turned		630		
Length (Inches)	BIR of Lading #		Weight		
132.000 Min. 156.000 Max.	428330		Melt Date: 10/12/15		

**VALBRUNA STAINLESS, INC.**  
370 VILLAGE DRIVE  
CAROL STREAM, IL. 60188  
*Ship To*

**VALBRUNA STAINLESS, INC.**  
370 VILLAGE DRIVE  
CAROL STREAM, IL 60188  
*Sold To*

P.O. 422951 - IAC 23972

Lifts: 0016

Condition H-1150

ASTMA 564-13

ASMESA 564 13

AMS 5643U (except finish)

AMS 5643/H1150

**CHEMICAL ANALYSIS**

C	Mn	P	S	Si	Cr	Ni	Mo	Cu	N	Co	Ta
.039	.46	.023	.020	.46	15.84	4.33	.19	3.27	.028	.250	.0032
Cb+Ta											
.2532											

**BRINELL (Type A device) (E-10)**

HBW

319

**ROOM TEMP TENSILE ASTM E8-16a**

TS (PSI)	.2%YS (PSI)	%EL(2")	%RA
141400	126000	19.4	60.9

**CHARPY V NOTCH E23-16b 10x10mm**

FT/LB	FT/LB	FT/LB	LAT EX	LAT EX	LAT EX	%SHR	%SHR	%SHR	AVG FT LB
63	67	69	21	26	27	50	50	50	66

TEST(F)

- 40

**MAGNETIC PARTICLE to AMS2303F**

FREQ SEV

AVG .08 .11

**MACRO ASTM E340-15/E381-01**

MACRO

OK

OK

OK

**GRAIN SIZE ASTM E112-13**

GRAIN SIZE	Etchant	Magnification X
7	Marbles	100

Results relate only to the items tested. Certification shall not be reproduced except in full, without written approval of Valbruna Stainless Inc. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal statutes, including Federal law Title 18, Chapter 47. Consult material safety data sheet (MSDS) for hazard info. I hereby certify that the reported figures are correct as contained in the records of the corporation.

Manager Laboratory Services

*Tad Landwehr*

TLandwehr@valbruna.us

Tad Landwehr



**VALBRUNA**

SLATER STAINLESS, INC.  
2400 TAYLOR STREET WEST • PO BOX 670  
FORT WAYNE, IN 46801 USA  
PHONE 260 434 2800 • FAX 260 434 2801

PO 422951  
IAC 23972

**Product Certification Report**

**Report Number: 5272160**

Certified on Dec 15, 2016 Page 2 of 2

Order I.D.	Order Date	Commodity Code			
1602035 002	12/01/16	H6303.5RT			
Dim 1	Dim 2	Dim 3	Heat I.D.	Customer I.D.	Customer Purchase Order
3.5000	.0000	.0000	268831	002472	51869
Product Shape	Product Surface				Customer Grade
Rounds	HR & Rough Turned				630
Length (inches)	Min.		Max.	Weight	Melt Date
132.000	156.000		428330		10/12/15

**VALBRUNA STAINLESS, INC.**  
370 VILLAGE DRIVE  
*Ship To* CAROL STREAM, IL. 60188

**VALBRUNA STAINLESS, INC.**  
370 VILLAGE DRIVE  
*Sold To* CAROL STREAM, IL 60188

**PERCENT FERRITE (AMS 2315)**

% FERRITE Etchant Magnification X  
AVG .4 Marbles 100

Solution heat treated at 1900 degrees F for 1 Hour min. and air cooled.

Heat treated at 1150 degrees F for 4 hours and air cooled.

Chemical testing to one or more of the listed ASTM methods:

E415-14, E1019-11, E1086-14.

Location of tensile fracture: inside middle of gage length, %elong after fracture.

Chemical Analysis performed at Acciaierie Valbruna, Italy.

No mercury or low melting alloy contamination. No weld repair.

Material melted in Italy, manufactured in the United States.

Material conforms to listed specifications. DFARS compliant. Our heat treat furnaces use air atmosphere.

Quality system is compliant with ISO 9001:2008. Produced in accordance with EN 10204 3.1.

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Manager Laboratory Services

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emsl TLandwehr@valbruna.us

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